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REPOUSSÉ METAL WORK.

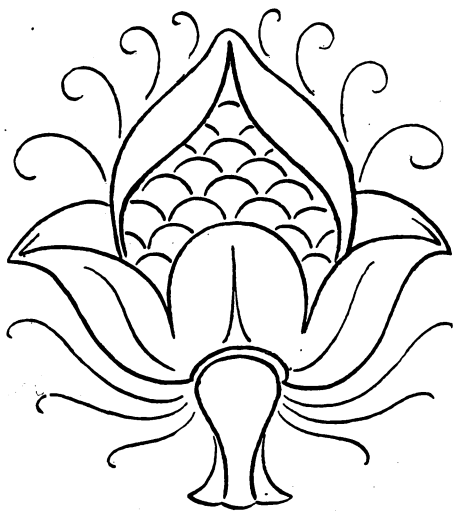
III.—TOOLS AND APPLIANCES.

TWO appliances are indispensable in repoussé, the first being the cement or pitch block (a bowl is sometimes used for the purpose), to which the metal to be operated upon must be attached. Unless the metal has a backing of some kind it will be almost impossible to impart shape to it, and unless this backing is of a proper kind the worker will be limited to the production of ornamentation but little better in appearance than a series of bruises. It will be seen at once that the backing must be of some plastic material that may at the same time yield where required and yet remain firm at all other points. To this end both wood and lead have been tried, but as these substances neither have the requisite elasticity, nor will they adhere to the entire surface of the brass or copper (without which little shaping or modelling can be done), they are of no use for the purpose of true repoussé. The only material that will answer all needed requirements—viz.: solidity, elasticity, adhesiveness and facility of application and removal, will be found to be a compound of ordinary pitch. There are several mixtures of this in use among professional workmen, and of these the following will be found to answer every purpose: Soft pitch, 7 lbs.; black resin, 4 lbs.; tallow, 6 oz.; bath brick, powdered, 6 lbs. A commoner mixture for filling bowls or vases is: Pitch, 3½ lbs.; resin, 2 lbs.; tallow, half a pound; white sand heated and then to be stirred in, 9 lbs. These are to be melted together over a slow fire in an iron saucepan or pitch kettle. The addition of more or less tallow will make the mixture harder or softer, as may be required. It is a good plan to make it of two degrees of hardness, a hard mixture (using very little tallow) for outlining and finishing upon, and a softer one (using a larger quantity of tallow) for the raising process. The mixture used for outlining should be sufficiently hard to prevent the metal, while it is being worked upon, from turning up at the edges, and yet tenacious enough to hold it until the design is outlined. Should the amateur prefer to get his cement ready made, either in lumps for melting up or already made into pitch blocks, there should be no difficulty in his doing so.

Having procured the cement, it should be melted in an iron saucepan over a slow fire, and when thoroughly fused poured upon a block of hard wood, or flat stone, about three inches thick, around which a stout piece of card, or brown paper, has been fastened by tacks, string or glue to the depth of about an inch or an inch and a half, so as to form an edging to prevent the cement running down the sides. When the cement is quite cold the edging is to be removed. This forms the pitch or cement block on which the repoussé is to be done. A block about twelve inches square will be quite large enough, it being extremely difficult to keep a larger surface of metal properly attached, owing to its expansion under the process of repoussé. When large pieces of work have to be done (though it should be arranged, as far as possible, to do such work in small portions, to be afterward fitted together), they must be worked in parts, the metal being shifted on the block until the whole is completed. A block about 12 inches by 9 inches, if 1 inch thick, will require some 8 or 9 lbs. of cement. The other indispensable requisite is a cushion on which the block is to be laid when in use. This should be made of canvas, or other material of close texture, filled with sifted river sand, and should be about an inch and a half thick and rather larger than the block. The cushion should not be quite filled—three quarters will be sufficient. It has sometimes been objected that the noise of repoussé work is prohibitive, but were this simple appliance used there would be little ground for the complaint, besides which the work will be of better quality when it is used, owing to the consequent freedom from vibration, than when it is discarded. To these appliances may be added Garratt and Fowler's spirit blow lamp, for softening the cement and attaching the metal to the block, and other similar purposes—a most convenient and useful little invention, which will save much time and trouble; a smoothing-iron or spatula for levelling the cement block; a strong pair of steel shears; a pair of flat and another of round-nosed pliers; a steel drawing or etching point; a smooth file or two; a saw frame and saws for metal, and a drill. It is by no means necessary to have all these articles, however, unless the worker intends to complete his work and make it up himself into the various articles for which brass is used, in which case, indeed, he will

almost need a small brass finisher's workshop. With regard to the work-table, it may be as well to say a word or two. It should be strong and substantial. A thin, spindle-legged table, that will shake and vibrate at every stroke of the hammer, should never be used, nor one with drawers in it, as these greatly increase the noise. A pupil of the writer's had a special table made, the top of which, though perfectly supported, was so constructed as to revolve, and thereby render the handling of the work exceedingly convenient; and to those who can afford so great a luxury we recommend the idea. The chair or stool—for the worker should always sit at his work—should be of such a height that the work, when attached to the cement block and placed in position on the sand-bag, shall be level with the middle of the chest. The position chosen for working should be directly facing a window, or having the right shoulder slightly turned toward the window. Of course a left-handed workman must reverse these positions.

Now to proceed to work: Cut off a piece of metal, flatten and soften it as directed. Now scour it thoroughly with coarse (F) emery cloth and oil (colza or lubricating); then with a finer (O) cloth rub the metal in a circular direction until there appears a fine graining all over the surface, after which wipe off the oil and grit with a rag on which a little turpentine has



EASY CURVES FOR FIRST OUTLINING.

been poured. The surface thus obtained will not only be better than that obtained by buffing, sanding or other such method, but will also be free from unpleasant glaze, and the pattern, when scratched on, will consequently be more clearly visible—a matter of no little importance in fine or elaborate work. The metal is now ready for attaching to the cement block. To do this, proceed as follows: Light the blow-lamp, the cotton of which must have been previously soaked with methylated spirit (but not so fully charged as to run over), and gently warm the surface of the cement by blowing the flame upon it, taking care to avoid burning it; this will cause the surface to become level, should there be any slight unevenness. It is at all times absolutely necessary to have a perfectly even surface when laying down the metal, and if the cement block be very uneven, the cement should be thoroughly softened (not melted) and the block then laid, cemented side downward, on a flat stone that has been damped, and left there with a weight upon it for half an hour or so. Next the metal must be made hot, rather more so than can be comfortably held in the hand, and then, while both it and the cement are warm, laid, papered side uppermost, on the cement. Press the metal firmly all over with a cloth, to avoid burning the fingers, until every part of it is in close contact with the cement. If this is done carefully, and at the proper temperature, the air will be completely excluded and the metal will be firmly attached to the cement. A little practice and judgment will soon enable the learner to master this very important particular. Both metal and cement must now be allowed to cool for a while, so as to permit of the transferring of the design. Of course a beginner must select a very simple pattern, by which is meant one in lines of very easy curves, such as that represented in the illustration above. Or perhaps it would be even

better for him to attempt a few slightly curved lines, advancing to straight ones, until a little mastery of the tracer has been gained. It may be here remarked that there are many things represented in a design by lines or dots that must on no account be thus rendered on the metal. To give an appearance of relief to his flat drawing the designer shades it up with lines or dots, but the production of the design in relief at once does away with the necessity for these, and to introduce them in the relief takes away their meaning and only gives the idea that the design is, from some unaccountable cause, slashed with cuts or spotted in certain parts with a number of dots. Some lines, too, merely indicate the form, and others, instead of being incised, should be in relief. The worker, therefore, must be careful to avoid reproducing anything that is unnecessary, the bare outline being generally all that is needed, all other lines being added at the last stage, when it will be less difficult to distinguish between those which are and those which are not required.

W. E. G. GAWTHORP.

China Painting.

LESSONS BY A PRACTICAL DECORATOR.

VI.—BURNISHERS, BRUSHES AND WHEELS.

GOLD, when it comes from the kiln, resembles a dull yellow paint more than the precious metal it is; but under proper treatment it soon presents a brilliant surface, provided it is a rich gold. If a gold which is cheap and half alloy be used, after firing it will look almost like copper, and unless two coats were applied will, in some places, be hardly more than a wash and very difficult to burnish—in fact, requiring to be refired.

If the gold is not fired enough it will rub off under the burnisher. If fired too hard it will, in a measure, be glazed, and will not respond to the touch of the tool. As I said in my last article, gold is not difficult to fire, and it requires the same heat that develops the carmines.

The best burnishers are made of bloodstone. These are used almost exclusively by practical workmen. They are expensive, ranging in price from one dollar and fifty cents to six dollars each. If they are offered at cheaper rates it is because they are worn out and cast aside by decorators who have found them useless. Agate burnishers are really better for amateurs, being less liable to scratch or discolor the china or decoration. They also have the advantage of being very much cheaper. It is not necessary to have a great variety of burnishers for ordinary work. Two—No. 14 and No. 13—will answer very well. They cost from fifty to seventy-five cents each. In selecting burnishers try to have them as free from imperfections as possible. In order to have a burnisher work well it must be kept perfectly clean and smooth. For this purpose a piece of sole leather is useful. It can be obtained at either a leather store or a store where shoes are mended. A piece four or five inches long and two and a half or even three inches wide will be necessary. Rub the leather two or three times over with moist whiting to take out the tannin. After the whiting is dry rub as much of it off as possible. Then rub on as much burnisher's putty as will go on the end of a small table knife, and the leather is ready for use.

If the burnisher's putty cannot be found at any of the stores where burnishers are sold, write to some of the houses advertising in *The Art Amateur*, as Sartorius, Weber & Co., or Marsching. The burnishers should be thoroughly rubbed on this piece of leather before using. It is a good plan to move the tool up and down in one place, forming a groove, turning it over and over, so that every part of it shall come in contact with the leather. Be sure and wipe it off with a soft cloth afterward, for if any of the putty adheres to it it will be transferred to the china. The putty should not be put on the leather every time it is used. Once in two or three weeks will do, and then only a very little should be used.

Care should be taken not to handle the gold any more than is necessary before burnishing, for there is more or less grease on the fingers which will soil it and make it more difficult to burnish. Hold the article to be burnished in the left hand, using a soft cloth. Have in a saucer or small dish some whiting that has been sifted through a muslin cloth and moistened with water. It is very necessary that the whiting should be sifted, there